

MUNICIPAL NPDES PERMITTING STRATEGY FOR PFAS

Water Resources Guidance

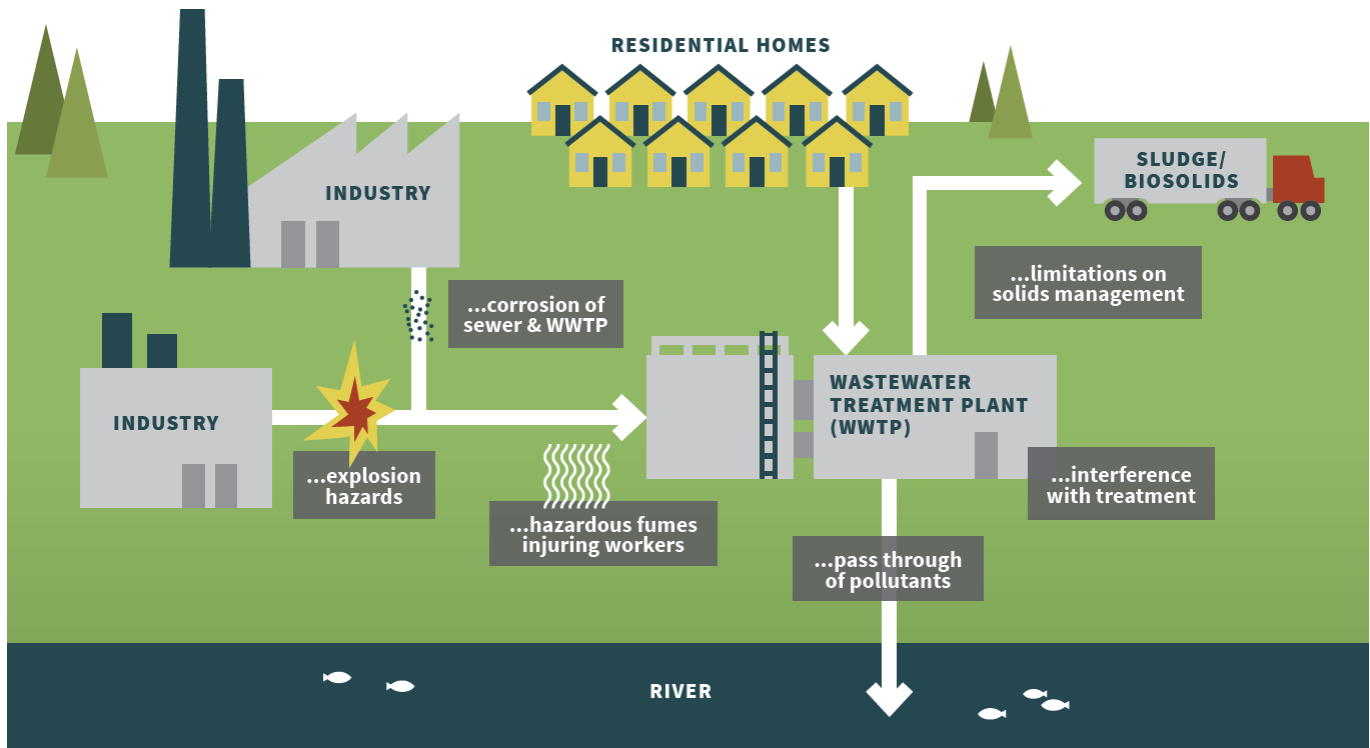
BACKGROUND

Perfluoroalkyl and polyfluoroalkyl substances (PFAS), also known as perfluorochemicals (PFCs), have been classified by the U.S. Environmental Protection Agency (USEPA) as an emerging contaminant on the national level. PFAS are a suite of chemicals historically used in thousands of applications throughout the industrial, food, and textile industries. Historical uses include firefighting foams, food packaging, cleaning products, and various other products. It is also used by many industries such as plating, tanneries, or clothing manufacturers, where waterproofing may be required, or a protective film is needed in a manufacturing process. These chemicals are incredibly stable, breaking down very slowly in the environment, and are highly soluble, easily transferring through soil to groundwater.

The State of Michigan's Part 4, Water Quality Standards (WQS) (Part 4 Rules), promulgated under Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), includes a narrative method to develop water quality values protective of human health and aquatic life. On August 2, 2020, the USEPA approved the revision to Michigan's Part 4 Rules, including Rule 57 (R 323.1057), Toxic Substances. As of July 2022, Water Quality Values (WQV) exist for three PFAS, perfluorooctanesulfonic acid (**PFOS**), perfluorooctanoic acid (**PFOA**), and perfluorobutanesulfonic acid (**PFBS**). PFOS is considered a bioaccumulative chemical of concern (BCC). For more information about WQVs, see the [Rule 57 Water Quality Values webpage](#). The State of Michigan's Part 8, Water Quality-Based Effluent Limit Development for Toxic Substances (Part 8 Rules), of the NREPA, is used to establish toxic substance water quality-based effluent limits (WQBELs) for point source discharges that are protective of the designated uses of the surface waters of the state. While concentrations of all three chemicals have been detected in influent and/or effluent at some municipal wastewater treatment plants (WWTP), PFOS has been found in higher concentrations in wastewater effluent relative to its WQV and is the focus of this strategy.

Pollutants in industrial wastewater may interfere with municipal treatment plant processes or contaminate waters of the state (i.e., pass-through of pollutants through treatment). To protect municipal treatment plants and the environment, the Industrial Pretreatment Program (IPP) requires industrial dischargers to use pretreatment techniques and management practices to reduce or eliminate the discharge of harmful pollutants to sanitary sewers. The following figure below shows why the IPP is important to protect health, safety, and Michigan's surface waters.

Industrial Pretreatment Programs Protect Against...



In February 2018, the Michigan Department of Environment, Great Lakes, and Energy (EGLE) launched the IPP PFAS Initiative, requiring all WWTPs with either federal- or state-required IPPs to determine whether they may be passing through PFAS to surface waters and reduce and eliminate any sources if found. For municipal WWTPs, the majority of PFOS sources were metal finishers, contaminated sites associated with industries or activities associated with PFOS, and landfills that accepted industrial wastes containing PFOS. Chemical manufacturers in the United States voluntarily stopped making PFOS and PFOA years ago; however, these chemicals may still be manufactured in other countries and imported. Industries were prohibited from using PFOS-containing chemicals in chromium electroplating tanks in September 2015, but these persistent chemicals have been found in factories years after they were used. Sites contaminated by firefighting foams or PFAS-contaminated industrial wastes have also been found to be sources for WWTPs if they discharge to the sanitary sewer.

Unfortunately, conventional WWTP treatment does not effectively remove PFAS if it is discharged to the sewer system by industries or contaminated sites. Instead, PFAS may be passed through WWTPs to lakes, streams, and groundwater, as well as interfere with the WWTP by impacting management of solids from the treatment process.

GOAL

The goal of this Permitting Strategy is to reduce or eliminate the emerging pollutants, PFAS, at municipal WWTPs using National Pollutant Discharge Elimination System (NPDES) permits. During permit re-issuance, EGLE will review all available WWTP effluent data to determine whether effluent limits for PFAS are necessary to protect water quality. An evaluation will be made to determine if the discharge causes, has the reasonable potential to cause, or contribute to an exceedance of the WQBELs. For NPDES permits issued after **October 1, 2021**, permits will specify effluent limits with schedules, as appropriate, after completion of the IPP PFAS Initiative if PFAS concentrations in WWTP effluent have not been sufficiently reduced to meet appropriate WQBELs and it is determined reasonable potential exists to exceed the WQBELs.

Industrial and stormwater discharges that either discharge directly to surface waters (e.g., lakes, streams, county drains) or to separate storm sewer systems will generally be addressed with an Administrative Consent Order. To learn more about WRD's strategy for these types of discharges, see WRD's [Compliance Strategy for Addressing PFAS \(PFOS/PFOA\) From Industrial Direct Discharges and Industrial Storm Water Discharges](#).

SUMMARY OF NPDES REQUIREMENTS

1. For WWTPs identified under the IPP PFAS Initiative as having sources of PFAS, NPDES permits will now include the following:
 - Effluent limits (with a specified compliance date) for PFOS, PFOA, and/or PFBS for those WWTPs whose effluent has reasonable potential to exceed WQBELs.
 - PFAS monitoring requirements, with results submitted in the MiEnviro Portal via Discharge Monitoring Reports for the PFAS analytes with effluent limits, and monitoring requirements for twenty-eight PFAS analytes with results submitted via the publicly-owned treatment works (POTW) PFAS Effluent Monitoring Report. Once an approved USEPA method is promulgated in 40 CFR Part 136, forty PFAS analytes will be required. Source reduction and/or elimination status reports submitted semi-annually.
 - A PFAS compliance schedule, including local limit development, reporting requirements, and corrective action plan if permit limits for applicable PFAS cannot be met by the compliance date.
 - Pollutant Minimization and Source Evaluation Program for PFOS, PFOA, and/or PFBS (as applicable) and related reporting requirements for WWTPs with monitoring requirements but no PFAS effluent limits. The Pollutant Minimization and Source Evaluation Program is triggered if effluent exceeds the WQBELs during the permit cycle.
 - Specific analytical methods and quantification levels for PFOS, PFOA, and PFBS. Requirement to use approved USEPA method once promulgated in 40 CFR Part 136.
 - Option to request monitoring frequency reductions for PFOS, PFOA, and PFBS.

2. For WWTPs with IPPs, even those where no sources have been found, NPDES permits will now include the following:
 - PFAS monitoring requirements for twenty-eight analytes with results submitted in the MiEnviro Portal via the POTW PFAS Effluent Monitoring Report. Once an approved USEPA method is promulgated in 40 CFR Part 136, forty PFAS analytes will be required.
 - Pollutant Minimization and Source Evaluation Program for PFOS, PFOA, and/or PFBS (as applicable) and related reporting requirements for WWTPs with monitoring requirements but no PFAS effluent limits. The Pollutant Minimization and Source Evaluation Program is triggered if effluent exceeds the WQBELs during the permit cycle.
 - Specific analytical methods and quantification levels for PFOS, PFOA, and PFBS. Requirement to use approved USEPA method once promulgated in 40 CFR Part 136.
 - Option to request monitoring frequency reductions for PFOS, PFOA, and PFBS.
3. For WWTPs without an IPP categorized as majors (design flows greater than one million gallons per day), or for WWTPs without an IPP and with PFAS biosolids concentrations above the mitigation criteria defined in the [Land Application of Biosolids Containing PFAS Interim Strategy](#), even those where no sources have been found, NPDES permits will now include the following:
 - PFAS monitoring requirements for twenty-eight analytes with results submitted in the MiEnviro Portal via the POTW PFAS Effluent Monitoring Report. Once an approved USEPA method is promulgated in 40 CFR Part 136, forty PFAS analytes will be required.
 - Pollutant Minimization and Source Evaluation Program for PFOS, PFOA, and/or PFBS (as applicable) and related reporting requirements. The Pollutant Minimization and Source Evaluation Program is triggered if effluent exceeds the WQBELs during the permit cycle.
 - Specific analytical methods and quantification levels for PFOS, PFOA, and PFBS. Requirement to use approved USEPA method once promulgated in 40 CFR Part 136.
 - Option to request monitoring frequency reductions for PFOS, PFOA, and PFBS.

CATEGORIZATION OF FACILITIES WITH PFOS

Information from the IPP PFAS Initiative was utilized to sort WWTPs into “Bins,” based on their effluent results and potential for sources. WWTPs were categorized as Bin 1, 2, 3a, or 3b. Effluent data for PFOS was used to categorize facilities as outlined below.

Bin	Sources Present	PFOS Effluent Data > WQBEL	PFOS Effluent Data (ng/L)
3b	Yes	Yes	≥50
3a	Yes	Yes	13-49
2	Yes	No	≤12
1	No	No*	<12 *

*Bin 1 facilities may not have effluent data.

MONITORING REQUIREMENTS

In general, facilities categorized above will have the following monitoring and permit requirements. In addition, select WWTPs without an IPP will have monitoring and permit requirements. Note that facilities categorized as Bin 1, Bin 2, and WWTPs without an IPP will contain language that triggers the implementation of the Pollutant Minimization and Source Evaluation Program and Reporting Requirements if effluent results exceed the WQBELs.

Bin/Type WWTP	PFOS Effluent Monitoring	Option for Monitoring Frequency Reduction	Pollutant Minimization and Source Evaluation Program	Corrective Action Plan	Reporting Requirements
3b	Monthly	Yes	No	Yes	Yes
3a	Monthly	Yes	No	Yes	Yes
2 with reasonable potential	Quarterly	Yes	No	Yes	Yes
2 without reasonable potential	Quarterly	Yes	Yes, with trigger	No	Yes
1 with reasonable potential	3x Annual	Yes	Yes, with trigger	No	Yes, with trigger
1 without reasonable potential	4x/5-yr Permit Cycle	No	Yes, with trigger	No	Yes, with trigger
WWTPs without IPP with reasonable potential and/or elevated biosolids	3x Annual	Yes	Yes, with trigger	No	Yes, with trigger
EPA Major WWTPs without IPP or reasonable potential	4x/5-yr Permit Cycle	No	Yes, with trigger	No	Yes, with trigger

POLLUTANT MINIMIZATION AND SOURCE EVALUATION PROGRAM FOR PFOS/PFOA/PFBS

A Pollutant Minimization and Source Evaluation Program will require that facilities identify and eliminate or reduce sources of PFOS, PFOA, and/or PFBS and at a minimum include:

- Identification of, and strategies to identify, PFOS, PFOA, and/or PFBS sources.
- Effluent, influent, and source monitoring.
- Measures to eliminate, reduce, and/or control sources.
- Strategies that will be used to measure success.
- Facilities will be required, at a minimum, to submit reports 2x annually detailing the progress of the Pollutant Minimization and Source Evaluation Program. These semi-annual reports will be reviewed by EGLE staff and additional work required if needed. EGLE may require an increase in monitoring frequency due to PFOS effluent variability or exceedance of the WQBEL based on data submitted to EGLE and/or if the facility has been reclassified into a higher bin category.

COMPLIANCE SCHEDULE FOR FINAL EFFLUENT LIMITS FOR PFOS/PFOA/PFBS

Facilities with PFOS, PFOA, and/or PFBS effluent limits will be required to continue their work to identify and eliminate or reduce sources of these pollutants and at a minimum:

- Develop and implement a local limit for PFOS, PFOA, and/or PFBS.
- Submit 2x annual status reports that document progress made in control of PFOS, PFOA, and/or PFBS.

Submission of a Corrective Action Plan is required if the facility is unable to comply with the final effluent limits at the specified due date in the permit.

This document is intended for guidance only and may be impacted by changes in legislation, rules, policies, and procedures adopted after the date of publication. Although this publication makes every effort to teach users how to meet applicable compliance obligations, use of this publication does not constitute the rendering of legal advice.

EGLE does not discriminate on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation in the administration of any of its programs or activities, and prohibits intimidation and retaliation, as required by applicable laws and regulations.

To request this material in an alternate format, contact EGLE-Accessibility@Michigan.gov or 800-662-9278.